Arshvir (Arsh) Jhaj

Canadian Citizen
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Education

- **University of British Columbia** — Vancouver, BC
  M.Sc., Computer Science — *September 2021 –*
  - GPA: 4.0/4.0
  - **Research**: Theoretical machine learning, distributed systems, convex optimization, AI for social good (e.g., differential privacy, fairness). Advised by Prof. Danica Sutherland
- **University of British Columbia** — Vancouver, BC
  B.Sc., Combined Major Computer Science and Mathematics — *September 2016 – May 2021*
  - GPA: 3.6/4.0
  - Graduated with Distinction.

Technical Skills

- **Programming Languages**: Python, Java, JavaScript, TypeScript, C, C++, C#, MatLab (*in order of experience*)
- **Technologies**: Git, Jira, Node.js, Jasmine, Mocha, Selenium, Maven, MongoDB, Jenkins (*in order of experience*)

Employment

- **University of British Columbia, Department of Computer Science** — Vancouver, BC
  Teaching Assistant — *May 2017 –*
  - Teaching assistant for a variety of computer science courses (e.g., introductory programming, discrete mathematics, and advanced algorithms) for the majority of academic terms since July 2017.
  - In Summer 2021, worked with Prof. Nicholas Harvey to develop a new course (CPSC 436R) on randomized algorithms, taught for the first time at UBC in September 2021.
- **University of British Columbia, Department of Computer Science** — Vancouver, BC
  Research Assistant — *May 2021 – August 2021*
  - Worked with Prof. Nicholas Harvey on an open problem in **theoretical machine learning**. Primarily worked on improving known error estimates for stochastic subgradient descent on non-smooth convex functions. Funded by an NSERC Undergraduate Student Research Award (USRA), the premier undergraduate research award in Canada.
- **Dodge Data & Analytics** — Vancouver, BC
  Software Quality Engineer Intern — *January 2019 – April 2019*
  - Involved in the backend development of product to search and filter construction projects and constructed-related products, chiefly using **Java** with limited exposure to **C# and ASP.Net** as well
  - Identified two bottlenecks in the recursive filtering logic, resulting in a **42% performance increase**.
  - Helped design and deploy frontend e2e tests written using **Selenium, Jasmine and Node.js**, as well as backend **REST API** tests using the Karate testing framework

Selected Projects

- **ConnectX**: A **Java**-based application which allows the user to play Connect4 against an AI. The AI is based on a minimax algorithm which utilizes alpha-beta pruning.
- **tabSort**: A simple **JavaScript**-based Chrome extension which sorts tabs by site, using the **Chrome API**. Published on Chrome Web Store.
- **insightUBC**: A full-stack web app to query UBC courses. Developed with **Node.js, JavaScript and TypeScript**.

Selected Awards

- **Stanley M Grant Scholarship in Mathematics, University of British Columbia** *2021*
- **NSERC USRA Grant, Natural Sciences and Engineering Research Council of Canada (NSERC)** *2021*
- **Dean's Honour List, University of British Columbia** *2021, 2020*
- **Dean of Science Scholarship, University of British Columbia** *2020*